

Remarks/Arguments:

The present invention relates to a digital broadcast receiving apparatus for receiving time division multiplexed programs. Specifically, the operation start point of a variable gain circuit is varied in response to a detected electric field strength and measured packet errors.

On page 2, the Official Action rejects claims 1-2 under 35 U.S.C. 103(a) as being unpatentable by Todd (US 6,002,672). On page 3, the Official Action rejects claims 1-2 under 35 U.S.C. 103(a) as being unpatentable by Goro (JP Publication 09-148973) in view of Todd. It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Todd teaches a diversity antenna system wherein a switch is controlled to select an antenna based on the detected electric field strength and bit error rate. Goro is related to a diversity receiver wherein the average of the received electric field strength is utilized to select an antenna.

Applicants' invention as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

... operation starting point controlling circuit that varies an operation starting point of a variable gain circuit in response to the detected electric field strength and the measured errors...

Claim 1 relates to a receiver with a variable gain circuit. Specifically, the operation start point of the variable gain circuit is controlled in response to both the detected field strength from an antenna and a measured errors in the received data packets. This feature is found in the originally filed Application on page 14, line 15 to page 15, line 23 and furthermore in Fig. 4. No new matter has been added.

In column 4, lines 3-34, Todd teaches switching between two antennas in response to received signal strength and bit error rate ("RSSI and BER measurements in order to determine how to toggle RF switch 35 in order to select which antenna is to be used for reception"). Column 5, lines 53-57 of Todd goes on to teach an automatic gain control (AGC) which is adjusted based on the received signal strength ("RSSI_a value is sent to the DSP to adjust internal DSP automatic gain control (AGC) in order to avoid bit hits which result when the

maximum input level of the baseband demodulator is exceeded"). Adjusting the automatic gain control based on the received signal strength is a conventional technique used in conventional receivers. This conventional technique insures that the signal remains within a predetermined amplitude range as recited in lines 56 and 57 of Todd ("in order to avoid bit hits which result when the maximum input level of the baseband demodulator is exceeded"). Therefore, it would not be obvious to change the operation start point of the automatic gain control **in response to the detected electric field strength and the measured errors** as suggested by the Examiner on page 2 of the Official Action. AGC as taught by Todd is only adjusted with respect to the received signal strength (not the measured errors).

In the Abstract, Goro teaches a diversity receiver which selects an antenna based on the received electric field strength. Goro, however, does not teach varying the operation start point of a variable gain circuit in response to a detected electric field strength and a measured errors. Thus, even combining Goro and Todd would not suggest the highlighted feature in claim 1.

In general, the references teach measuring received signal strength and bit error rate and also changing the operation start point of a variable gain circuit. The art of record, however, does not teach changing the operation start point of the variable gain circuit **in response to the measured received signal strength and bit error rate**. It should be noted that, while Todd teaches AGC, this conventional technique varies the gain in response to the level of the input signal. Conventional techniques such as Todd's would not teach varying the AGC in response to the measured bit errors.

Applicants' claim 1 is different than the prior art, because of the recitation of changing the operation start point of a variable gain circuit **in response to the measured received signal strength and bit error rate** ("varies an operation start point of a variable gain circuit in response to the detected electric field strength and the measured errors"). Applicants' feature as recited by claim 1 is disclosed on page 15, lines 5-18 of the specification where a DC offset is added to the AGC **in response to** high error ratio and detected electric field ("It is judged that a high interference rate exists in the vicinity ... as a DC offset ... to increase the strength against an interference wave"). This feature is also shown in Fig. 4 where the operation start point of the variable gain circuits 110, 117 and 118 are controlled by operation start point controlling circuit 135.

Appn. No.: 10/528,307
Amendment Dated April 8, 2008
Reply to Office Action of February 8, 2008

MAT-8654US

Accordingly, for the reasons set forth above, Applicants' claim 1 is patentable over the art of record.

Claim 2 includes all the features of claim 1 from which it depends. Thus, claim 2 is also patentable over the art of record for the reasons set forth above.

In view of the arguments set forth above, the above-identified Application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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Dated: April 8, 2008

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